Technical Procedures for Forensic Light Sources

1 Scope

Forensic Light Sources are used by FBI Laboratory Friction Ridge Discipline personnel to examine evidence for the presence of latent prints. Forensic Light Sources are used before any processing is conducted in order to visualize any inherent fluorescence and are also used in conjunction with certain processes that may result in fluorescence or improved contrast.

2 Limitations

Fluorescent compounds will suffer from loss of fluorescent intensity over time; as such, fluorescent prints will be captured as soon as is practicable.

Short-wave ultraviolet light (254nm) is detrimental to DNA examinations.

3 Equipment/Materials/Reagents

Coherent TracER LASER (532nm)

Dual77 Investigation LASER (520nm/445nm)

Blue Forensic Light Source (450nm)

Long-wave ultraviolet Forensic Light Source (365nm)

Short-wave ultraviolet Forensic Light Source (254nm)

Reflective Ultraviolet Imaging System (RUVIS)

CrimeScope® (Ultraviolet 300-400nm, 415nm, 445nm, 455nm, 475nm, 495nm, CrimeSceneScope [Crime Scene Search short pass filter SP530nm], 515nm, 535nm, 555nm, SP575nm, 600nm, 630nm, 670nm, white light and infrared output)

Other Forensic Light Sources

Barrier filter or eye-wear with appropriate barrier filter

4 Procedures

Personnel will complete the following steps:

1. Use appropriate barrier filter(s) (e.g., protective eye wear) and ensure it matches or exceeds Forensic Light Source's wavelength.

2. Adjust or select the appropriate Forensic Light Source intensity and/or wavelength as necessary and available.

3. View evidence using the Forensic Light Source.

For digital capture and photography, see FBI Friction Ridge Discipline Processing Manual Preamble.

5 Standards and Controls

Not applicable.

6 Sampling

Not applicable.

7 Calculations

Not applicable.

8 Measurement Uncertainty

Not applicable.

9 Safety

See FBI Laboratory Safety Manual for appropriate information.

10 References

FBI Laboratory Safety Manual, Federal Bureau of Investigation, Laboratory Division. Latest Revision.

FBI Friction Ridge Discipline Processing Manual, Preamble, Federal Bureau of Investigation, Laboratory Division. Latest Revision.

Lee, H.C. and Gaensslen, R. E. (1994). Advances in Fingerprint Technology. Boca Rotan:CRC Press.

LIA Laser Safety Committee, Edited by David H. Sliney. (1993). Laser Safety Guide, 9th ed. Orlando:Laser Institute of America.

Margot, P. and Lennard, C. (1994). Fingerprint Detection Techniques, 6th ed., Switzerland, Institut de Police Scientifique et de Criminologie.

Menzel, E. (1999). Fingerprint Detection with Lasers, 2nd ed. New York:Marcel Dekker, Inc.

Rev. #	Issue Date	History
1	10/02/17	Specific section numbers referenced in Preamble removed throughout document. Section 1, latent print personnel added. Section 4 removed and remaining renumbered. Titles for Section 4 and Section 7 modified. Section 9, generalized. Updated for Biometrics Analysis Unit. References updated.
2	07/15/21	Replace Latent Print Units with Friction Ridge Discipline. Minor wording changes. Re-organization and re-numbering of sections. Section 1, removed "any type of". Section 3, updated equipment. Section 4, streamlined procedures. .

Approval

Redact - Signatures on File

Friction Ridge Discipline
Technical Leader Date: 07/14/2021

Latent Print Operations
Unit Chief Date: 07/14/2021

Latent Print Support Unit
Chief Date: 07/14/2021

Scientific and Biometrics
Analysis Unit Chief Date: 07/14/2021